SERVICE MANUAL

MODEL "ROYAL 1000D"

ALL TRANSISTOR TRANSOCEANIC PORTABLE RECEIVER

CHASSIS 9HT41Z2

To the Serviceman

GENERAL

The transistor portable chassis is a conventional superheterodyne receiver using an individual mixer and oscillator to produce the 455 Kc intermediate frequency. The intermediate frequency amplifiers are conventional. It was necessary to neutralize the I.F. amplifier stages as in circuits using a triode tube. The diode 103-31 is used as a detector and AVC voltage source. This diode is part of I.F. Transformer T7. This is then followed by a first audio amplifier and a driver stage for the class B push-pull output. The 121-47 output transistors are a matched pair and will be coded with paint dots, red, white, yellow and green. Should one transistor fail it must be replaced with another 121-47 transistor with corresponding color. Do not use 121-47 transistors in pairs unless their color codes are identical.

The iron core slugs of the RF, mixer and oscillator coils have hexholes through their centers. This will enable the technician to tune the top slug then drop the alignment wrench No. 68-32 down through the slug to adjust the slug in the lower coil.

Power Supply – Eight Zenith Z2NL 1½ volt or Standard Flashlight Batteries total 12 volts D.C. Approximate battery life 300 hours. One Zenith Z2NL 1½ volt or Standard Flashlight Battery for the dial light.

Frequency Ranges:	9.4 to 10 Mc
150 to 400 Kc	11.4 to 12.2 Mc
540 to 1600 Kc	14.7 to 15.7 Mc
2 to 4 Mc	17.1 to 18.5 Mc
4 to 9 Mc	20.7 to 22.4 Mc

Intermediate Frequency: 455 Kc
Power Output Undistorted: 500 Milliwatts
Speaker: 4 inch P.M.
Alnico V, Voice Coil Impedance – 3.2 ohms @ 1000 cycles
Accessory Earphone 39-24 Impedance 15 ohms @ 1000 cycles

Current drain under no signal conditions with volume control at minimum is approximately 14.5 milliamperes.

RESISTANCE MEASUREMENTS

When making resistance measurements in the circuit, it is most important to remove the transistors in the circuit under test otherwise readings obtained will be incorrect. This is the direct result of a transistor acting as a diode.

When making measurements across an electrolytic capacitor, be certain the ohm meter leads are correctly polarized; also be certain the battery voltage of the meter does not exceed the working voltage of the capacitor. Otherwise damage to the capacitor may result.

VOLTAGE READINGS

It is suggested that a VTVM with an excellent low range scale be used to measure all circuit voltages. All voltages indicated on the accompanying diagrams have been measured under no signal conditions and a carbon battery supply voltage of 12.0 volts. Under these no signal conditions, a check can be made of the batteries. With carbon batteries, the total voltage should be 12.0 volts.

COMPONENT REPLACEMENT

When soldering components at the base of the transistor socket, it is suggested that the transistor be removed to avoid any possibility of excessive heat being transferred through the socket to the transistor. When soldering the low voltage electrolytics and germanium diodes, it is suggested that the wire be held with a pair of long nose pliers while soldering. The long nose pliers will act as a heat sink.

TRANSISTORS

There are several good transistor testers; one is The Hicock Model 870, another would be the Simpson 650 which must be used in conjunction with either a Simpson 260 or 270 V.O.M. Should this test equipment not be available a good reliable check is to substitute a new transistor and then check performance. There is a possibility that if transistors are replaced in the IF or RF circuit, these circuits may need realignment as the result of slight differences in transistor characteristics.

SIGNAL TRACING

Past practices used in radio repair commonly known as "screw driver testing" in which the B+ at the plate of the tube is shorted to ground to check for "clicks" in the speaker, is definitely not recommended. This practice would be comparable to shorting the collector of a transistor to ground which could damage the transistor. Standard point to point signal checking with the proper RF, IF and audio signals, should only be used.

REPAIR EQUIPMENT

The following list of equipment is what we recommend and use for repair of transistor chassis:

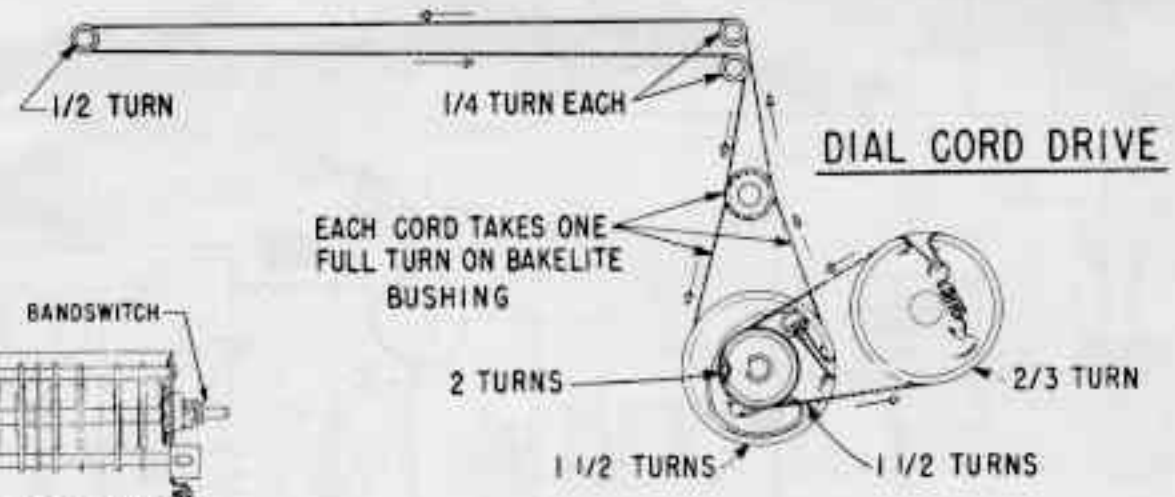
1. An RF signal generator supplying frequencies from 150 Kc to 23 Mc.
2. An audio generator or an audio signal source to be used for signal tracing after the diode detector.
3. A VTVM with a good low range voltage scale and a reliable resistance scale.
4. M209B Dazor floating lamp & magnifier or equivalent.
5. A set of optometrist tools – pliers, cutters, picks, etc.
6. A soldering iron with a very fine tip, not to exceed 35 watts.

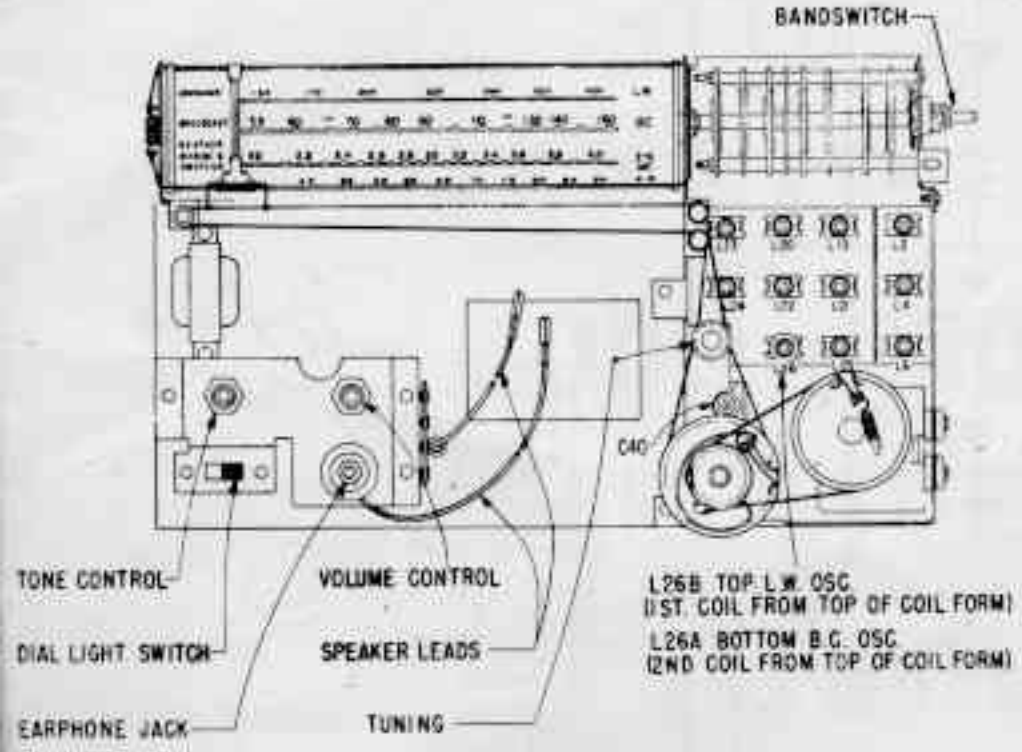
ALIGNMENT PROCEDURE

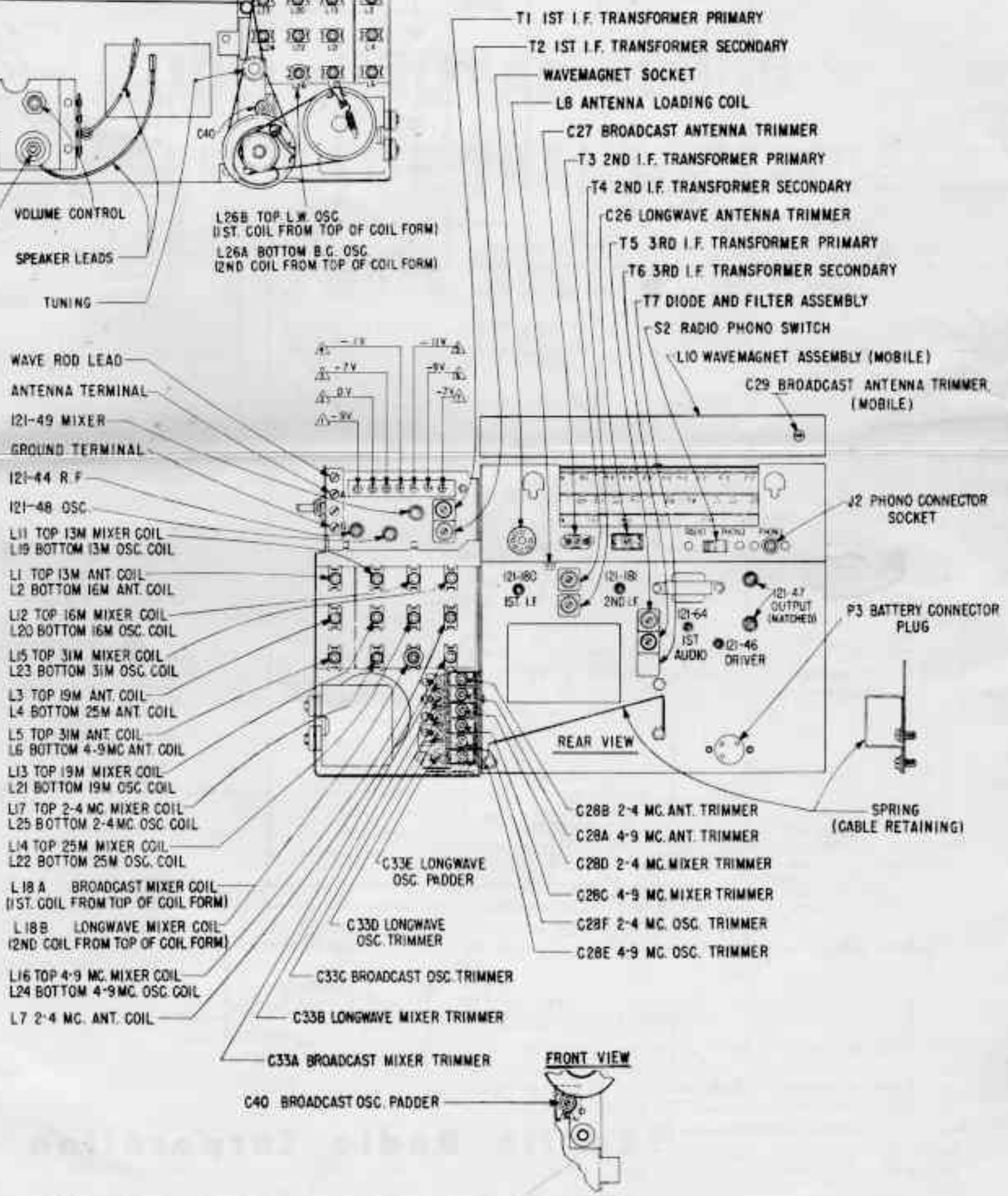
OPER.	CONNECT GEN. TO DUMMY ANTENNA	INPUT SIG. FREQUENCY	BAND	SET DIAL AT	TRIMMERS	PURPOSE
1	One turn loop coupled loosely to Broadcast Wavemagnet	455 Kc	BC	1600 Kc	T1, T2, T3, T4 T5, T6	Align I.F.
*2	One turn coupled loosely to Long Wave Wavemagnet	160 Kc	LW	160 KC	Rock Gang, Adjust C33E	Alignment of LW at 160 Kc
*3	One Turn Loop Loosely to Long Wave Wavemagnet	400 Kc	LW	400 Kc	C33D	Set osc. to scale
4		REPEAT OPERATIONS 2 & 3				
*5		160 Kc	LW	160 Kc	Rock, adjust L18B	Alignment LW mixer at 160 Kc
*6		375 Kc	LW	375 Kc	C33B	Alignment LW mixer
7		REPEAT OPERATIONS 5 & 6				
*8		375 Kc	LW	375 Kc	C26	Alignment of LW antenna
*9	One turn loop coupled loosely to Broadcast Wavemagnet	600 Kc	BC	600 Kc	Rock Gang, Adjust C40	Alignment of BC at 600 Kc
10	One Turn Loop Coupled Loosely to Broadcast Wavemagnet	1600 Kc	BC	1600 Kc	C33C	Set osc. to scale
11		REPEAT OPERATIONS 9 & 10				
*12		600 Kc	BC	600 Kc	Rock, adjust L18A	Alignment of BC mixer at 600 Kc
13		1400 Kc	BC	1400 KC	C33A	Alignment BC mixer
14		REPEAT OPERATIONS 12 & 13				
15		1400 Kc	BC	1400 Kc	C27	Alignment of BC antenna
16	One turn loop coupled loosely to Detachable Wavemagnet	1400 Kc	BC	1400 Kc	C29	Place Detachable Wavemagnet in center of a metal framed window & adj. C29 for max.
*17	3 Feet of Wire Approximately 1 Foot and Parallel from Extended Waverod	2.1 Mc	2-4 Mc	2.1 Mc	Rock L25, L17, L7	Alignment of SW osc., mixer & antenna
18		3.9 Mc	2-4 Mc	3.9 Mc	C28F, C28D, C28B	Alignment of SW osc., mixer & antenna
19		REPEAT OPERATIONS 17 & 18				
*20		4.25 Mc	4-9 Mc	4.25 Mc	Rock L24, L16, L6	Alignment of Short Wave Oscillator, Mixer and Antenna
21		8.75 Mc	4-9 Mc	8.75 Mc	C28E, C28C, C28A	
22		REPEAT OPERATIONS 20 & 21				
23		9.7 Mc	31 meters	9.7 Mc	L23, L15, L5	
24		11.8 Mc	25 meters	11.8 Mc	L22, L14, L4	
25		15.2 Mc	19 meters	15.2 Mc	L21, L13, L3	
26		17.8 Mc	16 meters	17.8 Mc	L20, L12, L2	
27		21.6 Mc	13 meters	21.6 Mc	L19, L11, L1	

*NOTE: Rock tuning condenser when making alignment under Operations 2, 3, 5, 6, 8, 9, 12, 17 & 20.

DIAL CORD DRIVE







TRANSISTOR and TRIMMER LAYOUT

MODEL ROYAL 1000D – CHASSIS 9HT41Z2

PART NO.	DIA. NO.	DESCRIPTION	PRICE
19-522		Coil Mtg. Clip (23 part of S-43367)	.05
19-331		Spring Clip (used on S-41779)	.10
22-5	C18	.01 Mfd. Ceramic Disc - 500V	.30
22-6	C44	470 Mmf. Ceramic Disc - 1 K V	.25
22-11	C16,48 49	.0033 Mfd. Ceramic Disc - 500V (3 required)	.25
22-17	C17	.001 Mfd. Ceramic Disc - 1000V	.25
22-18	C45	.0022 Mfd. Disc.	
22-1592	C30,35	25 Mmf. Ceramic - 500V (2 part of S-43367)	.33
22-1665	C25	5 Mmf. Ceramic - 500V (part of S-44367)	.25
22-1761	C31,36	50 Mmf. Ceramic - 500V (2 part of S-43367)	.25
22-2381	C10,13	6 Mmf. Ceramic - 500V (2 reqd.)	.25
22-2481	C11	8 Mmf. - Ceramic Disc	.25
22-2883	C47	50 Mfd. Electrolytic - 12V	1.10
22-2884	C20,21, 22	5 Mfd. Electrolytic - 12V 3 reqd.)	1.50
22-2969	C28A-F	6 Section Trimmer - (2-4 & 4-9 Mc. Ant., Mixer & Osc. - Used on S-43365)	3.00
22-2978	C6	7 Mmf. Disc	
22-2979	C38	60 Mmf. Ceramic - 500V 5%	.30
22-2981	C41	2700 Mmf. Mica 300V 5%	1.00
22-2982	C42	4300 Mmf. Mica 300V 5% (part of S-43367)	1.50
22-2983	C27,29	Trimmer (BC Ant. Fixed)	.35
22-2985	C46	500 Mfd. Electrolytic - 12V	2.00
22-2989	C26	Trimmer	.50
22-2998	C4,19	.1 Mfd. Mylar - 50V	.35
23-3016	C15	19 Mmf. Disc	
22-3034	C1,2,3, 7,8,14, 34,45,37	.05 Mfd. Ceramic Disc 25 V (9 used)	.45
22-3045	C23,24	.047 Mfd. Mylar 50V (2 used)	.40
22-3048	C33A-F	5 Section Trimmer	2.00
22-3049	C40	1 Section Trimmer	1.25
22-3050	C32A-C	3 Section Variable	6.00
22-3113	C39	120 Mmfd. Ceramic 500V	.50
22-3198	C12,9	2 x .05 Mfd. Ceramic Disc 25V (2 required)	.50
22-3326		2 x .001 Mfd. Disc - 25V	
22-3474	C5	470 Mmf. Mica	
22-3538	C50	125 Mmf. Condensor 5% 100V	
44-34	J4	Miniature Jack Headphone (used on S-52810)	.90
54-139		1/8 - 32 x 9/16 Hex Palnut (1 used on 85-668 & 2 on S-52810)	.03
54-227		4-40 x ¼ x 3/32 Hex Nut (2 used on 85-668)	.03
54-345		¼ x 32 x 3/8 Hex Nut (used on S-47501)	.03
54-421		Socket Rec. Nut (3 used on S-52810 & 1 on ea. 78-1063)	.03
57-2385		SW Mtg. Plate (used on S-43365)	.20
58-235	P3	3 Prong Plug (battery connector)	.15
59-330		Dial Pointer	.50
63-1740		82 OHM ½W Ins. 10%	.17
63-1743		1000 Ohm ½W Ins. 10%	.17
63-1744		100 Ohm ½W Ins. 20%	.17
63-1761		270 Ohm ½W Ins. 10%	.17
63-1771		470 Ohm ½W Ins. 10%	.17
63-1772		470 Ohm ½W Ins. 20% (3 required)	.17
63-1775		560 Ohm ½W Ins. 10%	.17
63-1778		680 Ohm ½W Ins. 10%	.17
63-1779		680 Ohm ½W Ins. 20%	.17
63-1782		820 Ohm ½W Ins. 10% (2 used)	.17
63-1786		1000 Ohm ½W.Ins. 20%	.17
63-1789		1200 Ohm ½W Ins. 10%	.17
63-1793		1500 Ohm ½W Ins. 20% (2 used)	.17
63-1796		1800 Ohm ½W Ins. 10%	.17
63-1800		2200 Ohm ½W Ins. 20% (2 reqd.)	.17
63-1803		2700 Ohm ½W Ins. 10% (2 used)	.17
63-1806		3300 Ohm ½W Ins. 10%	.17
63-1814		4700 Ohm ½W Ins. 20%	.17
63-1817		5600 Ohm ½W Ins. 10%	.17
63-1824		8200 Ohm ½W Ins. 10%	.17
63-1827		10K Ohm ½W Ins. 10%	.17
63-1828		10K Ohm ½W Ins. 20%	.17
63-1836		18K Ohm ½W Ins. 10%	.17
63-1848		33K Ohm ½W Ins. 10%	.17
63-1852		39K Ohm ½W Ins. 10%	.17
63-1879		180K Ohm ½W Ins. 5%	.34
63-1898		470K Ohm ½W Ins. 20%	.17
63-1904		680K Ohm ½W Ins. 10%	.17
63-1933		5.3 Megohm ½W Ins. 20%	.17
63-3392		1500 Ohm 1/10W Ins. 10%	.17
63-3663	R9	Thermistor	1.10
63-4171	R2	470 Ohm ¼W Ins. 10%	.17
63-4186	R1	1000 Ohm ¼W Ins. 20%	.17
63-4227	R3	10K Ohm ¼W Ins. 10%	.17
63-4245	R4,5	27K Ohm ¼W Ins. 10% (2 required)	.17
63-4329	R6	2.7 Megohm ¼W Ins. 10%	.17
63-4537		6.8 Ohm ½W Ins. 20%	.17
63-4623	R7	Volume Control & Switch (used on S-47501)	
63-4624	R8	Tone Control (used on S-47501)	
68-32		Adjusting Wrench	.60
78-644	J2	Connector Socket (phono)	.15

MODEL ROYAL 1000D - CHASSIS 9HT41Z2
CHASSIS PARTS

PART NO.	DIA. NO.	DESCRIPTION	PRICE
78-1063		Transistor Socket (3 contact) 6 used	.35
78-1096		Transistor Socket (4 contact 3 used on S-52810)	.35
78-1097	J1	Wavemagnet Socket	.25
80-402		Drive Cord Tension Spring	.04
80-1180		Drive Cord Tension Spring	.35
80-1189		Drive Cord Tension Spring	.15
80-1230		Spring (cable ret.)	.30
83-2145		5 Lug Terminal Strip	.10
83-2307		4 Lug Terminal Strip	
83-2627		2 Lug Terminal Strip (2 used)	.05
83-2750		7 Lug Terminal Strip	.10
83-2770		7 Lug Terminal Strip (Part of S-52810)	
83-2822		Ant. Terminal Strip (part of S-52810)	.50
85-495	S2	Radio - Phono Sw. DPDT	.60
85-668	S1	Bandswitch (part of S-43367)	12.00
86-199		Terminal (part of S-43365)	.03
E6-353		Connector Terminal (1 part of ea. S-21997 & 21999)	.03
93-709		Lock Washer (2 used on 85-668)	.03
93-1043		Spring Washer	.10
94-354		Capacitor Mtg. Bushing (3 Mt. 22-3050)	.03
95-1867	T1	1st I.F. Transformer - (Primary)	
95-1868	T2	1st I.F. Transformer (Secondary)	2.50
95-1869	T3	2nd I.F. Primary Transformer	2.50
95-1870	T4	2nd I.F. Secondary Transformer	2.50
95-1683	T9	Output Transformer	
95-1684	T8	Driver Transformer	
95-1871	T5	3rd I.F. Transformer (Primary)	
95-1872	T6	3rd I.F. Transformer (Secondary)	
100-218	PL1, PL2	Dial Light Lamp - G.E. #123 (2 used on S-42148)	.15
103-31		Crystal Diode	.75
113-8		6-32 x ¼ x ¼ Hex. Hd. Mach. Screw - Lock Washer Att. (1 used on ea. 22-2969, 3048 & 3049)	.03
113-9		8-32 x ¼ x ¼ Hex. Hd. Mach. Screw - Lock Washer Att. (2 Mt. S-47501)	.03
113-13		6-32 x 7/16 x ¼ Hex. Hd. Mach. Screw - Lock Washer Att. (3 used on 22-3050)	.03
114-39		8-32 x ¼ x ¼ Hex. Hd. Self-Tap Screw (9 required)	
114-193		8-32 x 3/16 x ¼ Hex. Hd. Self-Tap Screw (2 req.)	.03
114-442		8-32 x 5/16 Hex. Hd. Self-Tap Screw	.03
114-444		8-32 x 3/8 Hex. Hd. Mach. Screw - Flat Washer Att.	.05
114-456		8-32 x ¼ x ¼ Hex. Hd. Mach. Screw - Flat Lock Washer Att. (2 reqd.)	.03
114-571		4-24 x 3/16 x 3/16 Hex. Slot Hd. S Self-Tap Screw (2 used on S-43369)	.03
121-44		Transistor - R.F.	5.00
121-46		Transistor - Audio & Driver (2)	2.65
121-47		Transistor - Output (2)	5.90
121-48		Transistor - Oscillator	5.00
121-49		Transistor - Mixer	5.00
121-64		Transistor - Audio	2.15
121-180		Transistor 1st I.F.	
121-181		Transistor 2nd I.F.	
125-94		Rubber Grommet (3 used on S-43365)	.03
126-857		Coil Shield (2 used)	.05
126-985		Coil Shield	.10
149-74		Iron Core (1 part of ea. S-45000)	.10
149-211		Iron Core (1 part of ea. S-42082 through 42103 & 2 part of ea. 43363 & 43364)	.10
149-86		Iron Core (part of S-42080)	.10
188-128		Retaining Ring	
188-149		Retaining Ring (1 used on ea. S-41768 & 41779)	.03
199-330		Paper Sleeve	.03
S-17638		Drive Cord & Eyelet Assem.- Tuning	.10
S-21997		Terminal & Wire Assem. - Black	.15
S-21999		Terminal & Wire Assem. (used on S-47501) Yellow	.15
S-41768		Dual Pulley	.50
S-41779		Tuning Shaft & Pulley Assem. (used on S-43365)	.80
S-41930		Coil Mtg. Bracket (part of S43367)	.25
S-42080	L8	Ant. Loading Coil	.60
S-42082	L25	Osc. Coil (2-4 Mc - part of S-43367)	.60
S-42083	L24	Osc. Coil (4-9 Mc - part of S-43367)	.60
S-42084	L23	Osc. Coil (31 M - part of S-43367)	.60
S-42085	L22	Osc. Coil (25 M - part of S-43367)	.60
S-42086	L21	Osc. Coil (19 M - part of S-43367)	.60
S-42087	L20	Osc. Coil (16 M - Part of S-43367)	.60
S-42088	L19	Osc. Coil (13 M - part of S-43367)	.60
S-42089	L7	Ant. Coil (2-4 Mc - part of S-43367)	.60
S-42090	L6	Ant. Coil (4-9 Mc - part of S-43367)	.60
S-42091	L5	Ant. Coil (31 M - part of S-43367)	.60
S-42092	L4	Ant. Coil (25 M - part of S-43367)	.60
S-42093	L3	Ant. Coil (19 M - part of S.43367)	.60
S-42094	L2	Ant. Coil (16 M - part of S-43367	.60
S-42095	L1	Ant. Coil (13 M - part of S-43367)	.60

MODEL ROYAL 1000D - CHASSIS 9HT412Z2

CHASSIS PARTS

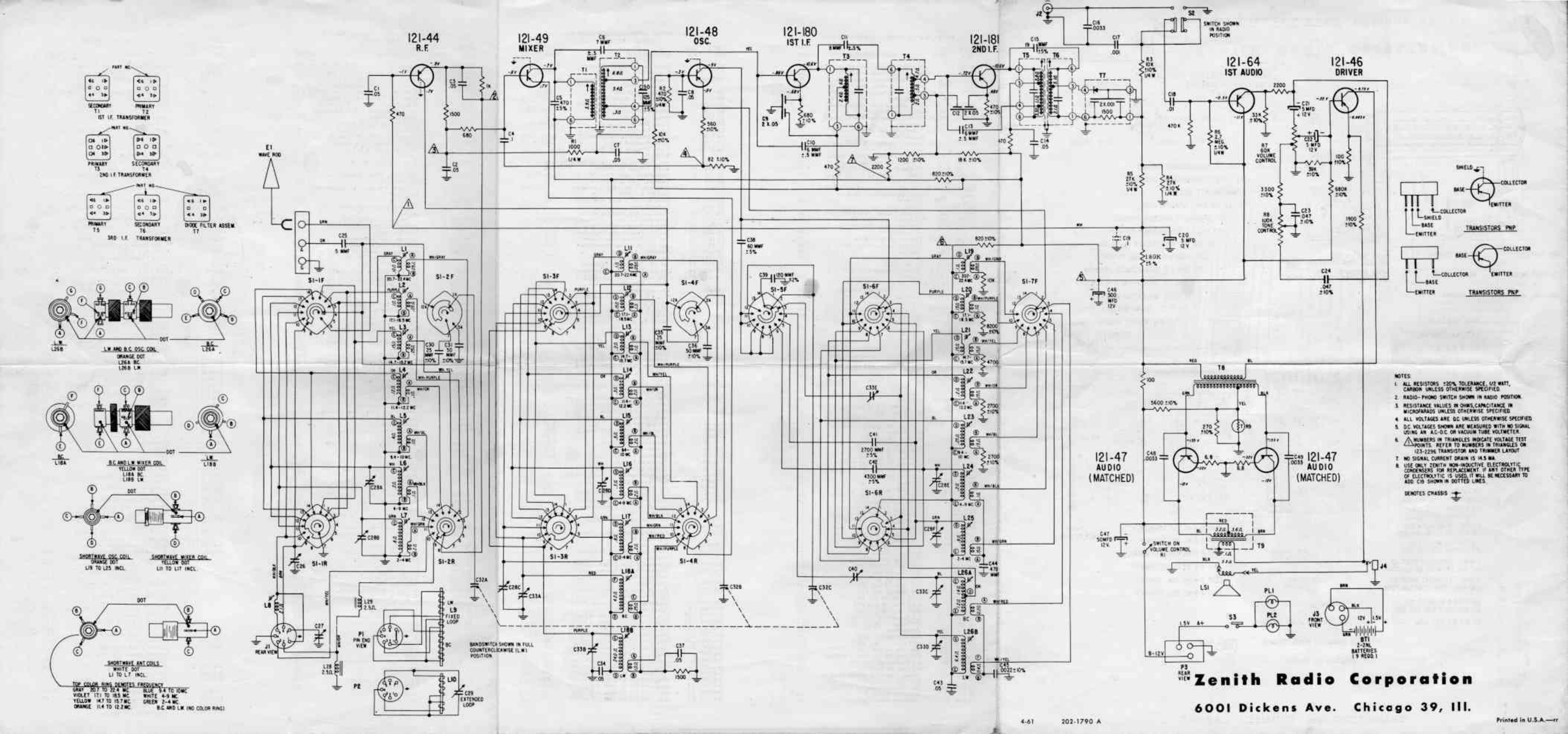
PART NO.	DIA. NO.	DESCRIPTION	PRICE
S-42097	L17	Mixer Coil (2-4 Mc - part of S-43367)	.60
S-42098	L16	Mixer Coil (4-9 Mc - part of S-43367)	.60
S-42099	L15	Mixer Coil (31 M - part of S-43367)	.60
S-42100	L14	Mixer Coil (25 M - part of S-43367)	.60
S-42101	L13	Mixer Coil (19 M - part of S-43367)	.60
S-42102	L12	Mixer Coil (16 M - part of S-43367)	.60
S-42103	L11	Mixer Coil (13 M- part of S-43367)	.60
S-42148		Dial Light Socket & Wire Assembly (used on S-43369)	1.25
S-42163		Drive Cord & Eyelet Assem. - Pointer	.20
S-42653		Drive Cord, Eyelet & Spring Assem.	.35
S-42723		Elastic Cord & Staple Assembly	.10
S-43365	L26A, L26B	Osc. Coil (B.C. & L.W.)	2.75
S-43364	L18A, 18B	Mixer Coil (B.C. & L.W.)	2.00
S-43365		R.F. Hsg., Pulley & Stud Assem. (mt. S-43367)	2.00
S-43367		Bandswitch & Coil Assem. (return for repair)	
S-43369		Dial Drum	5.00
S-43623		Pulley & Bracket Assembly (used on S-43365)	.80
S-45000	L28,29	Series Ant. Coupling Coil	
S-47501		Control Mtg. Bracket, Switch & Strip Assembly	
S-49339		Antenna Coil (Accessory)	
S-50171		Base & Terminal Assem.	.15
S-52810		R.F. Shelf Bracket & Terminal Assem. (used on S-43365)	1.00

CABINET PARTS

Z-2NL		1½V "A" Battery "D" (used 9)	
12-2463		Rear Door Latch	.25
12-2604		Support Bracket	.95
12-3024		Chassis Support Bracket	
15-108		Socket Cap	.10
15-191		Plug Cap (used on 58-233)	.20
16-1362		Packing Carton - Outer	
24-1001		Battery Case Cover	.75
27-257		Paper Disc (4 used)	.03
36-205		Handle - Bottom Section (mts. S-42207)	1.25
43-311		Wavemagnet Hsg. - Fixed (used on S-43594)	.75
46-1809		Tuning Knob	2.00
46-1810		Release Knob (used on S-42185)	1.25
46-1812		Antenna Knob (part on S-42207)	.25
46-2005		Volume Control Knob	.50
46-2006		Tone Control Knob	.50
49-829	LS1	4" PM Speaker	6.00
54-12		6-32 x ¼ x 3/32 Hex. Nut (3 Mt. ea. 57-2372 & 2373)	.03
54-444		Speed Nut (5 Mt. 192-236)	.03
54-445		Speed Nut (1 used on ea. 114-620)	.05
54-455		Speed Nut (8 used on 57-2389)	.03
54-467		Speed Nut (8 used)	.03
57-1725		Emblem Plate (used on log chart door)	.25
57-2208		Emblem Plate (used on 138-148)	.25
57-2371		Cabinet Top Plate	5.25
57-2372		End Plate (left)	8.00
57-2373		End Plate (right)	8.00
57-2379		Trim Plate (band selector)	1.25
57-2380		Trim Plate (used on 57-2372)	1.25
57-2386		Hinge Plate (used on 57-2372 & 2373)	.25
57-2389		Escutcheon Plate (used on 138-148)	3.75
57-2414		Name Plate (Zenith)	.90
57-2416		Trim Plate (tuning)	.80
58-233	P1,P2	7 Prong Connector Plug (used on S-43594)	.55
69-312		6-32 Mach. Screw (4 required)	
76-954		Release Lever & Ant. Pivot Hsg. Shaft	.15
78-1101		3 Contact Socket	.20
80-1432		Spring - Rear Door Latch	.25
80-1176		Selector Knob Spring	.10
80-1181		Torsion Spring (used on S-42206)	.15
80-1228		Spring (handle)	.30
83-2489		Rubber Strip (3 used on 57-2371)	.03
83-2741		Trim Strip (used on 138-148)	.50
83-2742		Support Strip (1 used on ea. 57-2372 & 2373)	.25
83-2785		Rubber Strip (2 used on S-42183)	.05
83-2930		Retaining Strip	.10
83-2865		Spacer Strip (5 used)	.03
83-2903		Protective Cover Strip	
83-2930		Retaining Strip	.03
83-3235		Rubber Strip (2 used)	.03
83-3339		Wedge Strip	.03
86-310		Terminal	
86-325		Spade Terminal (used on S-42206)	.03
93-166		Lock Washer (1 used on ea. 54-12)	.03
93-565		Steel Washer (4 used on 57-2371)	.03
93-1289		Fibre Washer	.03
93-1301		Felt Washer (1 used with ea. 54-444)	.03
93-1303		Rubber Bumper	
93-1324		Steel Washer	.03

CABINET PARTS

PART NO.	DIA. NO.	DESCRIPTION	PRICE
94-985		Spacer Bushing (4 part of S-41850)	.05
110-348		Vinyl Material (2 used on end plate)	.30
110-349		Vinyl Material (Cabinet Support Bracket)	1.00
110-350		Vinyl Material (Lower Front Door)	.75
110-352		Vinyl Material (Inside Top Door)	.55
110-353		Vinyl Material (Rear Door)	1.30
112-1113		4-40 x 7/32 Phils Truss Hd. Mach. Screw (2 used on ea. 12-2604 & 76-954)	.03
112-1123		2-32 x 11/32 Fill Hd. Self-Tap Screw (5 used on S-43259)	.05
112-1124		4-24 x 11/32 Fill Hd. Self-Tap Screw (4 used on S-43259)	.03
112-1150		4-40 x ¼ Phils Rd. Hd. Mach. Screw (2 used on S-42190)	.03
*112-1153		6-20 x 3/8 Phil. Pan Hd. Self-Tap Screw (4 join 43-311 & S-42183)	.03
112-1156		4-24 x ¼ Phils. Flat Self-Tap Screw (4 part of S-42190)	.05
112-1190		5-20 x 3/16 Phils Pan Hd. Self-Tap Screw (6 used)	
112-1205		2-56 x 3/16 Slotted Pan Hd. Self-Tap Screw (4 Mt. S-42193)	.03
112-1225		4-40 x 3/16 Phils Hd. Self-Tap Screw (2 used on ea. S-41780 & S-41850)	.03
112-1332		4-40 x ¼ Phils. Flat Hd. Mach. Screw (4 part of S-43605)	.03
113-95		6-20 x ¼ x ¼ Hex Hd. Self-Tap Screw - Lock Washer Att. (used on 46-1810)	.05
114-87		8-18 x ½ x ¼ Hex Hd. Self-Tap Screw (2 required)	
114-572		4-24 x 3/16 x 3/16 Hex Hd. Self-Tap Screw (1 used on ea. S-41778 & 41780)	.03
114-615		6-20 x 5/16 Hex Hd. Self-Tap Screw (2 used on 57-2416)	.03
114-620		6-32 x 5/16 x ¼ Hex Hd. Mach. Screw - Flat Washer Att. (2 used)	.03
114-770		8-32 x ½ x ¼ Slot Hex Hd. Mach. Screw	
114-785		6-32 x 5/16 x ¼ Hex Hd. Mach. Screw (3 used on ea. 57-2372 & 2373)	.03
117-206		Handle Release Lever	1.75
138-148		Grille (used on S-41850)	2.00
138-168		Background Grille	.60
152-266		Handle Support Block	.30
166-97		Plastic Bumper (4 used on S-41850)	.04
166-105		Rubber Bumper (11 used)	.05
166-106		Bumper (2 used)	.03
188-177		Knob Clamping Ring (used on 46-1809)	.03
188-226		Retaining Ring	.03
189-199		Plastic Bag	
192-236		Dial Crystal	5.00
196-302		Trim Plate Gasket	.15
202-1630		Instruction Book	.75
202-1790		Service Notes (schematic & parts List)	.20
202-1357		Short Wave Chart Book	2.50
202-1358		Specifications Book	.35
S-41778		Spring & Stud Assem. R.H. (used on 57-2373)	.30
S-41780		Spring & Stud Assem. L.H. (used on 57-2372)	.30
S-41850		Cabinet Support Bracket	5.00
S-42183		Wavemagnet Mtg. Strip & Latch Spring Assem. (used with S-43594)	.75
S-42193		Log Chart Ret. Plate & Compass Disc Assem.	4.50
S-42206		Ant. Pivot Hsg. Sleeve & Shaft Assem. (used with S-42207)	2.50
S-42207	E1	Telescopic Antenna-wave rod	5.50
S-42212		Wavemagnet Ant. (mobile)	7.50
	22-2985	Trimmer (used on S-42297)	.35
	83-2785	Rubber Strip (2 used)	.05
	83-3042	Rubber Strip (part of S-42212)	.03
	93-1289	Fibre Washer (part of S-42298)	.01
	112-850	6-20 x 3/8 Phils Set Screw (2 used)	.03
	S-42297	Wavemagnet Ant. Winding	3.00
	S-42298	Cable Plug	1.75
	S-42329	Cover & Suction Cup Assem.	1.25
	S-42330	Hsg. & Stud Assem.	1.00
S-42190		Lower Door	7.00
S-43259		Handle & Pin Assembly	1.00
S-43325		Support Bracket, Trim & Leather Assem.	8.50
S-43594	L9	Wavemagnet Winding	4.50
S-43605		Cabinet	
S-44815		Top Door, Trim Strip & Leather Cover Assem.	
S-48169		Rear Door & Bushing Assembly	8.50
S-48171		Battery Hsg. & Contact Wire Assem.	7.00
S-50113		Band Selector Knob	
S-52650	T7	Diode & filter assembly	


121-44
R.F.
121-49
MIXER
121-48
OSC.
121-180
1ST I.F.
121-181
2ND I.F.
121-64
1ST AUDIO
121-46
DRIVER
121-47
AUDIO
(MATCHED)
121-47
AUDIO
(MATCHED)
SWITCH SHOWN IN RADIO POSITION
1ST I.F. TRANSFORMER
2ND I.F. TRANSFORMER
3RD I.F. TRANSFORMER
DIODE FILTER ASSEM.
LW AND B.C. OSC. COIL
ORANGE DOT
L26A BC
L26B LW
B.C AND LW MIXER COIL
YELLOW DOT
L18A BC
L18B LW
SHORTWAVE OSC COIL
ORANGE DOT
L19 TO L25 INCL.
SHORTWAVE MIXER COIL
YELLOW DOT
L11 TO L17 INCL.
SHORTWAVE ANT COILS
WHITE DOT
L1 TO L7 INCL.
TOP COLOR RING DENOTES FREQUENCY
GRAY 30.7 TO 22.4 MC
VIOLET 17.1 TO 18.5 MC
YELLOW 14.7 TO 15.7 MC
ORANGE 11.4 TO 12.2 MC
BLUE 5.4 TO 10MC
WHITE 4-9 MC
GREEN 2-4 MC
B.C AND LW (NO COLOR RING)
BANDSWITCH SHOWN IN FULL COUNTERCLICKWISE (L.W.) POSITION
TRANSISTORS PNP
TRANSISTORS PNP
NOTES:
1. ALL RESISTORS ±20% TOLERANCE, 1/2 WATT, CARBON UNLESS OTHERWISE SPECIFIED.
2. RADIO-PHONO SWITCH SHOWN IN RADIO POSITION.
3. RESISTANCE VALUES IN OHMS, CAPACITANCE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
4. ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
5. D.C. VOLTAGES SHOWN ARE MEASURED WITH NO SIGNAL USING AN A.C.-D.C. OR VACUUM TUBE VOLTMETER.
6. NUMBERS IN TRIANGLES INDICATE VOLTAGE TEST POINTS. REFER TO NUMBERS IN TRIANGLES ON 123-2296 TRANSISTOR AND TRIMMER LAYOUT.
7. NO SIGNAL CURRENT DRAIN IS 14.5 MA.
8. USE ONLY ZENITH NON-INDUCTIVE ELECTROLYTIC CONDENSERS FOR REPLACEMENT. IF ANY OTHER TYPE OF ELECTROLYTIC IS USED, IT WILL BE NECESSARY TO ADD C19 SHOWN IN DOTTED LINES.
DENOTES CHASSIS
Zenith Radio Corporation
6001 Dickens Ave. Chicago 39, Ill.
4-61 202-1790 A
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